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EXAMINER

HAMO, PATRICK

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3746

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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DETAILED ACTION

This action is in response to amendments filed on November 17, 2010.

Claim Objections

Claim 22 is objected to because of the following informalities: in line 5 of the claim "provide" seems to be a typo for --provided--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 21 includes a limitation drawn to a parting plane situated essentially centrally in the cross section of the spiral channel between the covers and the central housing part.

This limitation is shown in the embodiment of fig. 9, which requires a spiral channel formed partially in the cover, and is mutually exclusive as to the elements of the other embodiments claimed in claim 1, namely that the spiral channel is provided entirely in the housing part. Therefore, there is no disclosure of an embodiment that includes both

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that spiral channels are provided entirely in the housing part and that the parting plane is situated centrally in the cross section of the spiral channel.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-13 and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reynolds, US 4,598,542 in view of Roemuss et al., US 2005/0069427.

In regard to claims 10 and 22:

Reynolds discloses a fluid flow engine comprising a central housing part (core 28) in which a turbine shaft 16 is mounted, the housing part having a turbine side (to the right in fig. 1) and a compressor side (to the left in fig. 1) and being integrally molded as part of the housings for each side (volumes 36 and 40 are carved into the core, defining the spaces where the compressor and turbine reside), wherein a turbine inlet 42 is arranged tangentially to the turbine shaft 16 on the turbine side and a turbine discharge arranged axially on the turbine side (routing fluid from the turbine 14 to diffuser 52), a compressor outlet 38 arranged tangentially and an inlet (at 32) arranged axially, wherein both sides are provided with covers (plates 24, 26), and the volumes 36, 40 providing for

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flow between the tangential connectors and the axial connectors for each side.

Reynolds does not disclose that the volutes are spiral channels, or that the tangential connectors are tangential at the point of connection to said spiral channel.

However, Roemuss teaches a housing for a fluid flow engine including spiral channels 6 and 7. Roemuss teaches that ordinarily the supply channel 6 and discharge channel 7, corresponding to volutes 36 and 40 of Reynolds, may be formed annular or spirally in a fluid flow engine such as that taught by Roemuss or Reynolds (paragraph [0012]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have substituted the spiral channel of Roemuss for the volute of Reynold to achieve the predictable result of providing channels for the flow of fluid in a fluid flow engine. Furthermore, the spiral channels 6, 7 of Roemuss are both formed entirely in a central housing part (see fig. 1) and covered by substantially flat covers 18 and 20 on both compressor and turbine sides, and the connectors 8 and 9 of Roemuss connect tangentially to the spiral channels 6, 7.

In regard to claim 11:

The fluid flow engine of Reynolds is a turbocompressor (having a turbine driving a compressor), which produces a mass flow delivered from the turbine 14 to the diffuser 52.

In regard to claim 12:

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Both covers (plates 24, 26) of Reynolds are essentially planar and face the central housing (core 28).

In regard to claim 13:

Both volutes 36 and 40 of Reynolds are formed by parts of the core 28 and plates 24, 26. In combination, the spiral channels as taught by Roemuss would also be formed by the plates and core.

In regard to claim 16:

The connections 38 and 42 of Reynolds are inserted tangentially, then angle out and extend toward the volutes 36 and 40 in a direction parallel to the turbine shaft 16.

In regard to claim 17:

In combination with the spiral channels of Roemuss, any tangential position may be positioned with either connection (see discussion of claim 15 above). Therefore, each connection can be positioned at any angle to the axis of the turbine shaft in a tangential position depending on the design requirements and constraints of the turbocompressor system.

In regard to claims 18-20:

The connections 38 and 42 of Reynolds are arranged on compressor and turbine side covers, respectively. The connections go through the core and into the volutes defined by the cover plates.

In regard to claim 21:

The parting plane of Reynolds, where the covers (plates 24, 26) meet the central housing part (core 28), is situated essentially centrally in each of the volutes (see fig. 1), such that they would be situated centrally in each of the spiral channels in combination.

Allowable Subject Matter

Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed November 17, 2010 have been fully considered but they are not persuasive. Applicant overlooks the teachings of Roemuss in providing tangential connections to the spiral channel (not previously claimed) and spiral channels formed entirely in the central housing part. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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